

**CLAIMS**

What is claimed is:

1           1.       A method for forming an image on a phosphor screen of a cathode ray tube,  
2           comprising:

3                    providing an electron gun assembly having an electron source disposed at a  
4           source end and electrodes for forming an image of the electron source on the phosphor screen;

5                    providing a multi-element field effect cathode to serve as the electron source, the  
6           multi-element field effect cathode comprising a common carrier assembly and a plurality of field  
7           emission arrays and electrical bond pads for controlling emission current from each array;

8                    providing a deflection apparatus to cause an electron beam from each array to  
9           traverse the phosphor screen in a horizontal and a vertical direction.

10                   providing a clock signal having a selected number of succession of increments;

11                   providing a phosphor screen wherein the phosphor screen is comprised of a  
12           plurality of stripes of phosphor and a plurality of stripes of mask material disposed between the  
13           plurality of stripes of phosphor; and

14                   applying selected voltages to the deflection apparatus and to the electrical bond  
15           pads in response to the clock signal to cause a selected emission current from a selected array as  
16           the electron beam from the array traverses the phosphor screen.

1           2.       The method of claim 1 wherein an increment of the clock signal causes the  
2           electron beam to move a distance of one-half the width of the beam.

1           3.       The method of claim 1 wherein four increments of the clock signal cause the  
2   electron beam to move across a phosphor stripe having a selected color.

1           4.       The method of claim 1 wherein the field emission array is a carbon-based  
2   material.